

NASA OIG Review

December 1999
Vol 1, No. 2



NASA OIG Review is distributed to Congress, NASA, and other government agencies to provide information about the reports and activities of the NASA Office of Inspector General



New Reports!

FLIGHT TERMINATION SYSTEMS

Flight Termination Systems (FTS) are designed to terminate the flight of vehicles that can no longer be controlled to remain within authorized airspace and public safety is at risk. In our assessment of NASA's use of FTS (*Report G-98-007*), we determined that many of NASA's FTS do not provide adequate safeguards to ensure that only authorized commands are received by the vehicle's FTS. We also found that NASA use of FTS does not comply with national policy.

The expanded use of autonomous flight control means that FTS may be the sole means of controlling a vehicle from the ground. With the emergence of launch vehicles (such as the X-33 and X-34) that fly beyond traditional range boundaries, it is even more critical that the FTS meets the highest degree of reliability to ensure mission success and public safety.

We proposed NASA should use secure FTS (as opposed to the non-secure FTS many NASA systems currently use) to the maximum extent possible based on a thorough risk assessment. A secure FTS provides a higher level of security and assurance to prevent against unintentional and unauthorized activation of the FTS. As an example, we believe the recent crash of the Air Force's \$45 million Global Hawk vehicle could have been prevented if secure FTS had been used.

We made several recommendations we believe will increase security, mission success, and public safety. NASA generally concurred with our recommendations



The Global Hawk Vehicle

and is currently working several issues. As a result of this report and other FTS-related activities initiated by our office, NASA has designated FTS as one of four areas of significant management concern.

YEAR 2000 COMPUTER PROBLEM



The Office of Inspector General has recently issued several reports on the Year 2000 (Y2K) computer problem:

- NASA's Year 2000 Program - Renovation and Validation Phases (*Report IG-99-034*) reported that agency guidelines for Y2K renovation and validation phases were generally consistent with Federal guidance.
- Year 2000 Date Conversion - Assessment Phase Summary (*Report IG-99-035*) summarized prior OIG audits on NASA's efforts to assess the magnitude of and requirements for the Agency's Y2K problem.
- Year 2000 Program - Implementation Phase (*Report IG-99-044*) recommended improvements to NASA's business continuity and contingency plans.
- Year 2000 Program Oversight of NASA Grants and Cooperative Agreements (*Report IG-99-048*) recommended that NASA obtain Y2K compliance information from grant and cooperative agreement recipients and, if necessary, take remedial action.

Management has been responsive to these reports' recommendations.

NASA OIG HOTLINE

Contact the NASA OIG Hotline to report fraud, waste, abuse or mismanagement in NASA programs

1-800-424-9183

<http://www.hq.nasa.gov/office/oig/hq/hotline.html>

New Reports!

NASA AIRCRAFT REVISITED

In response to an audit we conducted in 1995, NASA recently completed a cost analysis of one of its six mission management aircraft. We reviewed the cost analysis and found that it did not comply with Office of Management and Budget requirements because the study did not consider the use of commercial airlines as an alternative to the NASA aircraft (*Report IG-99-057*). We recommended that NASA dispose of the aircraft and use commercial airlines, which would save the Agency about \$600,000 annually. We also recommended that NASA terminate its planning efforts to acquire \$43.9 million in new aircraft. Agency management disagreed with our recommendations. We will continue to follow this issue.

NONCOMPETITIVE PROCUREMENTS

NASA obligated more than \$4.4 billion in FY1998 for noncompetitive procurements. We recently audited NASA's noncompetitive procurement procedures. The resulting report, *NASA Noncompetitive Procurements (IG-99-056)* found that of the 40 noncompetitive procurements at three of four NASA Centers reviewed, 17 had inadequate technical analyses.

To ensure price reasonableness, contracting officers usually request a technical analysis of the contractor's proposed resources. We found that technical analysts frequently did not provide adequate support for their conclusions or did not document important fact-finding discussions held with contractors to clarify unresolved proposal matters. As a result, the contracting officers' negotiating flexibility was reduced, leading to prices at or near contractor proposed or Government budget amounts. We also found that over half of the purchase orders we reviewed lacked the price support required by the Federal Acquisition Regulation. Therefore NASA lacks assurance that it has paid the best price for supplies and services. We recommended that the Office of Procurement:

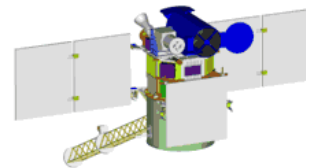
- provide written guidance on noncompetitive procurement to technical analysts,
- require contracting officers to include additional documentation in the contract file, and
- require staff responsible for noncompetitive procurements to receive refresher training about the relevant Federal Acquisition Regulations.

OIG REVIEW DECEMBER 1999

Management concurred with all recommendations. Management plans to reemphasize the importance of technical analyses and will provide training to assist personnel in evaluating and pricing noncompetitive acquisitions.

TRIANA

The Triana project intends to send a spacecraft to L1 (a location one million miles from Earth where the gravity of the Earth and Sun effectively cancel each other). The spacecraft would gather Earth and space science data from this unique vantage point and transmit color pictures of the Earth for distribution on the Internet.



**The Triana
Spacecraft**

In our Assessment of the Triana Mission (*Report G-99-013*) we noted that a relatively simple and inexpensive mission focused primarily on inspiration and education had evolved into a more complex mission focused primarily on science. The added scientific capabilities would increase the amount of data gathered by the mission, but they would also increase the mission's total cost. We also expressed concern that Triana's added science may not represent the best expenditure of NASA's limited science funding.

We also noted that the Triana spacecraft, originally conceived as a cooperative effort between students, industry, and government, is essentially being built, launched, and operated by NASA. NASA's major role in developing and launching the spacecraft does not further the goals of the National Space Policy of 1996 and the Commercial Space Act of 1998, which direct NASA to acquire spacecraft and launch vehicles from the private sector whenever possible.



**Earth
From Apollo 17**

We recommended that NASA reassess its current approach to the Triana mission, and modify that approach if necessary. NASA management did not concur with our recommendation. In October 1999, Congress directed NASA to suspend work on Triana until after an evaluation of the scientific goals of the mission by the National Academy of Sciences.

Investigations

The OIG's investigative arm conducts criminal and regulatory investigations in which NASA is a victim. Recently, we have investigated:

MOONROCKS

With few exceptions, the Moon rocks gathered by the Apollo missions are considered national treasures and cannot be privately owned or sold. In the past year, the Office of Inspector General has investigated four cases involving alleged Moon rocks.



A real Moon rock

In one case, two brothers attempted to auction alleged lunar samples that they claimed had been obtained on Apollo 12. In cooperation with the FBI, our investigation determined that the rocks were fakes. Both brothers have since pled guilty to charges of conspiracy to commit wire fraud.

In another case, a man was indicted on 12 counts of wire fraud and 12 counts of mail fraud for attempting to sell lunar samples he claimed had been collected by the crew of Apollo 11. Prospective buyers were provided copies of phony chemical analysis of the samples. The suspect also offered to pay a NASA Jet Propulsion Laboratory (JPL) employee \$10,000 to declare the samples were genuine. Investors had paid in excess of \$80,000 to purchase the alleged lunar samples by the time the suspect was arrested.

In the third case, the moon rocks were real. Working with the Customs Service and the Postal Inspection Service, we seized a Moon rock that had originally been given to the Republic of Honduras in 1972. A man attempting to sell the rock smuggled it into the United States without properly declaring it. The

Customs Service intends to return the rock to the Republic of Honduras.

Finally, in an ongoing investigation we seized a desk set that allegedly contained scraps of lunar material. The set, which was owned by a dealer in rare objects, had originally been given to a retiring NASA engineer in 1970. Against NASA policy, the engineer's coworkers had worked some scraps of lunar materials into the desk.

KICKBACKS

On July 26, 1999, a former Subcontract Manager, and a former Quality Control Manager in Montreal, Quebec were charged with soliciting and accepting kickbacks totaling approximately \$413,000 from NASA and Department of Defense (DoD) subcontracts. The company involved manufactures flight hardware used on the Space Shuttle, the International Space Station, and various military missiles and aircraft.

SWEDISH "HACKERS"

Two Swedish citizens were charged by Swedish prosecutors for illegal intrusions or "hacker" attacks into NASA and DoD network communication systems. The charges cite illegal intrusions into United States military systems as well as NASA network communication systems at JPL and the Glenn Research Center during the fall of 1996. Damages to NASA systems totaled approximately \$159,100. We conducted this investigation in cooperation with the Air Force Office of Special Investigations and the Swedish National Police.

FALSE TESTING OF ELECTRONIC PARTS

On August 23, 1999, a major NASA subcontractor was ordered to serve five-years probation, pay a criminal fine of \$500,000, restitution of \$1.2 million, and a \$300 special assessment fee. The company was responsible for testing electronic components for the International Space Station and falsely claimed that certain required tests had been performed.

CHILD PORNOGRAPHY

On October 25, 1999, a former NASA employee and a former NASA contractor employee were both re-sentenced to 15 months in prison for possession of child pornography they had downloaded to NASA computers at Kennedy Space Center. The cases were handled by the OIG and the U.S. Customs Service.

SECURITY ALERT

Computer Hard Drives

Do you believe that when you delete a file from your computer that it has been completely erased? It may surprise you to know that the file probably still exists on your hard drive. This poses a real information security threat because NASA routinely sends its old computers to schools and other destinations outside of the Agency.

We recently inspected computers in the property disposal process at a NASA Center to see whether data and software could be found on the hard drives (*Report G-99-003*). We found data and registered software on the majority of the hard drives inspected. Some of the data left on the hard drives contained Privacy Act information, while other data could be considered sensitive. In some cases, the data was readily retrievable by simply powering up the hard drives. We were able to easily retrieve data on most other hard drives by using an inexpensive commercially available software utility.

Ongoing Reviews

BADGING AND PHYSICAL ACCESS CONTROLS

This inspection will determine whether NASA procedures are in compliance with applicable controls and will evaluate Agency processes for controlling access to sensitive facilities and controlled information and materials. We plan to identify and share lessons learned and best practices.

ISS PORTABLE COMPUTER SYSTEM

This inspection began as an assessment of International Space Station (ISS) Program Implementation of Communications Security and Automated Information Security Measures. The Portable Computer System on the ISS provides the primary crew interface for command and control of the space station. We will be assessing issues concerning the usability and effectiveness of the Portable Computer System.

NASA EXCHANGES

We have initiated our first in a series of comprehensive inspections of NASA Exchange operations. The overall objective of these inspections is to determine whether Center Exchanges are meeting employee needs and conducting operations in a manner consistent with applicable policies and statutory and regulatory controls. This review will include, but not be limited to, exchange-supported functions, activities, internal controls, investments, and financial documents.

SECURITY ISSUES

The OIG is currently conducting two audits that deal with control of sensitive information and technology. Our audit of the management and administration of International Agreements will determine if these agreements are properly executed, appropriate clearances are obtained for foreign personnel who have access to NASA facilities, and controls over release of information are established. Our audit of contractor controls over sensitive technologies will evaluate controls to prevent unauthorized and unlicensed transfers. We will also assess Government oversight of contractor processes for control of sensitive technologies.

Other New Reports

- X-38/Crew Return Vehicle Operational Testing (*Report IG-99-036*)
- Performance Evaluation Plan for the Earth Observing System Data and Information system Core System Contract (*Report IG-99-038*)
- Assessment of the National Aeronautics and Space Administration's Automated Systems Incident Response Capability (*Report G-99-007*)
- Safety Considerations at Goddard Space Flight Center (*Report IG-99-047*)
- X-33 Cost Estimating Process (*Report IG-99-052*)
- Jet Propulsion Laboratory Management of Subcontractor Technical Performance (*Report IG-99-054*)
- NASA Implementation of the Government Performance and Results Act (*Report IG-99-055*)

Acquiring OIG Reports

Most reports are posted on the web at www.hq.nasa.gov/office/oig/hq/reports.html
Printed reports can be requested by calling (202) 358-1220